

What is claimed is:

1. A method, comprising:  
creating a first context node associated with a first portion of a base portion of an electronic document;  
creating a second context node associated with an annotation to the base portion; and  
linking the second context node with the first context node.
2. A method according to claim 1, wherein the first context node includes a member selected from the group of: a paragraph node, a line node, a word node, and a drawing node.
3. A method according to claim 1, wherein the first context node includes a member selected from the group of: a group node, a paragraph node, a line node, an ink word node, an electronic drawing node, an ink drawing node, a list node, a list item node, an electronic bullet node, an ink bullet node, an electronic text word node, an image node, a table node, a row node, and a cell node.
4. A method according to claim 3, wherein the second context node is selected from the group of: an unclassified ink node, a group node, a paragraph node, a line node, an ink word node, an ink drawing node, a list node, a list item node, an ink bullet node, a table node, a row node, and a cell node.
5. A method according to claim 1, wherein the annotation to the base portion includes electronic ink data.
6. A method according to claim 5, wherein the base portion includes at least one of electronic text, an image, a table, a list, a graph, a spreadsheet, a chart, or a drawing.
7. A method according to claim 1, further comprising:  
parsing at least the first portion of the base portion to thereby identify information for inclusion in the first context node.
8. A method according to claim 7, further comprising:

parsing at least the annotation to thereby identify information for inclusion in the second context node.

9. A method according to claim 8, wherein prior to parsing the annotation, the annotation includes at least one unclassified ink node.

10. A method according to claim 1, further comprising:

rendering the base portion and the annotation, wherein the annotation is located at a first position with respect to the base portion;

changing data associated with the base portion such that a location associated with the first context node changes to a second position; and

rendering the annotation and the base portion with the changed data, wherein the annotation is rendered at a third position with respect to the base portion at least in part based on the second position of the first context node.

11. A method according to claim 1, wherein the first context node and the second context node are arranged in a hierarchical data structure representing data associated with the electronic document.

12. A method according to claim 11, wherein the first context node and the second context node share at least one common parent node.

13. A method according to claim 1, wherein data associated with the first context node and the second context node enable the electronic document to be rendered such that the annotation contains the first portion of the base document.

14. A method according to claim 1, wherein data associated with the first context node and the second context node enable the electronic document to be rendered such that the annotation underlines the first portion of the base document.

15. A method according to claim 1, wherein data associated with the first context node and the second context node enable the electronic document to be rendered such that the annotation strikes out the first portion of the base document.

16. A method according to claim 1, wherein data associated with the first context node and the second context node enable the electronic document to be rendered such that a first portion of the annotation points between a second portion of the annotation and the first portion of the base document.

17. A computer-readable medium including computer-executable instructions stored thereon for performing the method of claim 1.

18. A method, comprising:

parsing a first data set containing data associated with a base document;

parsing a second data set that includes unclassified electronic ink data; and

linking at least some portion of the second data set with at least some portion of the first data set.

19. A method according to claim 18, wherein parsing the first data set results in a first parsed data set containing a plurality of context nodes, wherein at least a first context node of the first parsed data set includes a member selected from the group of: a group node, a paragraph node, a line node, an ink word node, an electronic drawing node, an ink drawing node, a list node, a list item node, an ink bullet node, an electronic bullet node, a text word node, an image node, a table node, a row node, and a cell node.

20. A method according to claim 19, wherein parsing the second data set results in a second parsed data set containing a plurality of context nodes, wherein at least a first context node of the second parsed data set includes a member selected from the group of: a group node, a paragraph node, a line node, an ink word node, an ink drawing node, a list node, a list item node, an ink bullet node, a table node, a row node, and a cell node.

21. A method according to claim 20, wherein during the linking, the first context node of the first parsed data set is linked with the first context node of the second parsed data set.

22. A method according to claim 18, wherein parsing the first data set results in a hierarchical arrangement of context nodes associated with the base document.

23. A method according to claim 18, wherein parsing the second data set results in a hierarchical arrangement of context nodes associated with an annotation to the base document.

24. A method according to claim 23, further comprising:

rendering the base document and the annotation, wherein the annotation is located at a first position with respect to the base document;

changing data associated with the base document such that a spatial location associated with the first data set changes to a second position; and

rendering the annotation and the base document with the changed data, wherein the annotation is rendered at a third position with respect to the base document at least in part based on the second position associated with the first data set.

25. A method according to claim 18, wherein parsing the first data set and parsing the second data set results in a hierarchical arrangement of context nodes associated with the first data set and the second data set.

26. A method according to claim 25, wherein at least one context node associated with the first data set shares at least one common parent node with at least one context node associated with the second data set.

27. A computer-readable medium including computer-executable instructions stored thereon for performing the method of claim 18.

28. A method, comprising:

receiving a call from an application program to parse a first data set containing at least some unclassified electronic ink data in an electronic document;

requesting a second data set from the application program, wherein the second data set includes data associated with the electronic document in a spatial area associated with a location of the unclassified electronic ink data; and

classifying the first data set at least in part based on the second data set.

29. A method according to claim 28, wherein the classifying includes determining whether the first data set constitutes electronic ink representing an annotation of at least some portion of the second data set.

30. A method according to claim 29, wherein, when it is determined that the first data set constitutes electronic ink representing an annotation of at least some portion of the second data set, the method further includes linking at least some portion of the first data set to at least some portion of the second data set.

31. A method according to claim 28, further comprising:  
parsing the first data set.

32. A method according to claim 28, wherein the first data set is sent to a parser at the same time that the second data set is sent to the parser.

33. A computer-readable medium including computer-executable instructions stored thereon for performing the method of claim 28.

34. A system, comprising:  
an input for receiving electronic ink input data in an electronic document; and  
a processor programmed and adapted to: (a) create a first context node associated with a first portion of a base portion of the electronic document, (b) create a second context node associated with an annotation to the base portion, and (c) link the second context node with the first context node.

35. A system according to claim 34, wherein the first context node includes a member selected from the group of: a paragraph node, a line node, a word node, and a drawing node.

36. A system according to claim 34, wherein the first context node includes a member selected from the group of: a group node, a paragraph node, a line node, an ink word node, an electronic drawing node, an ink drawing node, a list node, a list item node, an

electronic bullet node, an ink bullet node, an electronic text word node, an image node, a table node, a row node, and a cell node.

37. A system according to claim 36, wherein the second context node is selected from the group of: an unclassified ink node, a group node, a paragraph node, a line node, an ink word node, an ink drawing node, a list node, a list item node, an ink bullet node, a table node, a row node, and a cell node.

38. A system according to claim 34, wherein the annotation to the base portion includes electronic ink data.

39. A system according to claim 38, wherein the base portion includes at least one of electronic text, an image, a table, a list, a graph, a spreadsheet, a chart, or a drawing.

40. A system according to claim 34, wherein the processor is further programmed and adapted to parse at least the first portion of the base portion to thereby identify information for inclusion in the first context node.

41. A system according to claim 40, wherein the processor is further programmed and adapted to parse at least the annotation to thereby identify information for inclusion in the second context node.

42. A system according to claim 41, wherein prior to parsing the annotation, the annotation includes at least one unclassified ink node.

43. A system according to claim 34, wherein the processor is further programmed and adapted to: (d) render the base portion and the annotation, wherein the annotation is located at a first position with respect to the base portion, (e) receive input indicating a change in data associated with the base portion such that a location associated with the first context node changes to a second position, and (f) render the annotation and the base portion with the changed data, wherein the annotation is rendered at a third position with respect to the base portion at least in part based on the second position of the first context node.

44. A system according to claim 34, wherein the first context node and the second context node are arranged in a hierarchical data structure representing data associated with the electronic document.

45. A system according to claim 34, wherein the first context node and the second context node share at least one common parent node.

46. A system according to claim 34, wherein data associated with the first context node and the second context node enable the electronic document to be rendered such that the annotation contains the first portion of the base document.

47. A system according to claim 34, wherein data associated with the first context node and the second context node enable the electronic document to be rendered such that the annotation underlines the first portion of the base document.

48. A system according to claim 34, wherein data associated with the first context node and the second context node enable the electronic document to be rendered such that the annotation strikes out the first portion of the base document.

49. A system according to claim 34, wherein data associated with the first context node and the second context node enable the electronic document to be rendered such that a first portion of the annotation points between a second portion of the annotation and the first portion of the base document.

50. A system, comprising:

an input for receiving electronic ink data; and

a processor programmed and adapted to: (a) parse a first data set containing data associated with a base document, (b) parse a second data set that includes unclassified electronic ink data, and (c) link at least some portion of the second data set with at least some portion of the first data set.

51. A system according to claim 50, wherein the processor is programmed and adapted to parse the first data set to provide a first parsed data set containing a plurality of

context nodes, wherein at least a first context node of the first parsed data set includes a member selected from the group of: a group node, a paragraph node, a line node, an ink word node, an electronic drawing node, an ink drawing node, a list node, a list item node, an ink bullet node, an electronic bullet node, a text word node, an image node, a table node, a row node, and a cell node.

52. A system according to claim 50, wherein the processor is programmed and adapted to parse the second data set to provide a second parsed data set containing a plurality of context nodes, wherein at least a first context node of the second parsed data set includes a member selected from the group of: a group node, a paragraph node, a line node, an ink word node, an ink drawing node, a list node, a list item node, an ink bullet node, a table node, a row node, and a cell node.

53. A system according to claim 52, wherein during the linking, the first context node of the first parsed data set is linked with the first context node of the second parsed data set.

54. A system according to claim 50, wherein the processor is programmed and adapted to parse the first data set into a hierarchical arrangement of context nodes associated with the base document.

55. A system according to claim 50, wherein the processor is programmed and adapted to parse the second data set into a hierarchical arrangement of context nodes associated with an annotation to the base document.

56. A system according to claim 55, wherein the processor is further programmed and adapted to: (d) render the base document and the annotation, wherein the annotation is located at a first position with respect to the base document, (e) receive input indicating a change in data associated with the base document such that a spatial location associated with the first data set changes to a second position, and (f) render the annotation and the base document with the changed data, wherein the annotation is rendered at a third position with respect to the base document at least in part based on the second position associated with the first data set.



57. A system according to claim 50, wherein the processor is programmed and adapted to parse the first data set and the second data set into a hierarchical arrangement of context nodes.

58. A system according to claim 57, wherein at least one context node associated with the first data set shares at least one common parent node with at least one context node associated with the second data set.

59. A system, comprising:

an input adapted to receive a call from an application program to parse a first data set containing at least some unclassified electronic ink data in an electronic document; and

a processor programmed and adapted to: (a) request a second data set from the application program, wherein the second data set includes data associated with the electronic document in a spatial area associated with a location of the unclassified electronic ink data, and (b) classify the first data set at least in part based on the second data set.

60. A system according to claim 59, wherein, during the classifying, the processor is further programmed and adapted to determine whether the first data set constitutes electronic ink representing an annotation of at least some portion of the second data set.

61. A system according to claim 60, wherein, when it is determined that the first data set constitutes electronic ink representing an annotation of at least some portion of the second data set, the processor is further programmed and adapted to link at least some portion of the first data set to at least some portion of the second data set.

62. A system according to claim 59, wherein the processor is further programmed and adapted to parse the first data set.

63. A computer-readable medium having a data structure stored thereon representing content of an electronic document, the data structure comprising:

a first data set containing a hierarchical arrangement of context nodes associated with a base portion of the electronic document;

a second data set containing a hierarchical arrangement of context nodes associated with an annotation to the electronic document; and

a linking data set linking at least one context node of the second data set with a context node of the second data set.

64. A computer-readable medium according to claim 63, wherein the second data set includes electronic ink data.

65. A computer-readable medium according to claim 63, wherein the first data set and the second data set share at least one common parent node.